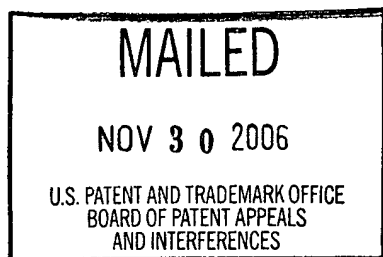


The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte MATTHEW VACEK and GEORGE B. GRIFFITH



Appeal No. 2006-2250
Application No. 09/883,790
Technology Center 3700

ON BRIEF

Before LEVY, HORNER and FETTING, *Administrative Patent Judges*.
HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the examiner's final rejection of claims 1-3 and 5-8 of the pending application. Claim 4 has been canceled. Claims 9-16 have been withdrawn from issue.

We affirm.

BACKGROUND

The appellants' invention relates to a composite bat. Claim 1, reproduced below, is representative of the subject matter on appeal. A copy of all of the claims on appeal can be found in the appendix to the appellants' brief.

1. A bat comprising:
 - a hitting surface;
 - a handle element attached to the hitting surface; and
 - a sleeve positioned within the hitting surface, wherein the hitting surface and the sleeve are comprised of composite materials;wherein the hitting surface is made from a first set of fibers and a first resin and wherein the sleeve is made from a second set of fibers and a second resin, the second set of fibers and the second resin being different than the first set of fibers and first resin.

The examiner relies upon the following as evidence of unpatentability:

Uke	5,303,917	Apr. 19, 1994
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The following rejections are before us for review.

1. Claims 1, 2, and 6 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Uke.
2. Claims 3, 5, 7, and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Uke.

Rather than reiterate in detail the conflicting viewpoints advanced by the examiner and the appellants regarding this appeal, we make reference to the final Office action (mailed May 1, 2003) and the examiner's answer (mailed July 8, 2004) for the examiner's complete reasoning in support of the rejection and to the

appellants' brief (filed April 8, 2004) and reply brief (filed September 13, 2004) for the appellants' arguments.

OPINION

In reaching our decision in this appeal, we have carefully considered the appellants' specification and claims, the applied prior art, and the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations that follow.

Rejection under 35 U.S.C. § 102(b)

The appellants treated claims 1, 2, and 6 as a group. Brief, p. 4. As such, we address claim 1 as the representative claim of the group. The appellants argued that Uke does not anticipate the subject matter of claim 1, because the sleeve (60) of Uke is outside of inner member (58) and thus is not "within the hitting surface" as claimed. Brief, p. 6. We disagree.

We find that Uke discloses a bat (FIG. 6) having a hitting surface (impact region 54 of second tubular member 60), a handle element attached to the hitting surface (handle region 52 of first tubular member 58), and a sleeve (transition and barrel regions of first tubular member 58) positioned within the hitting surface. We disagree with the appellants' argument that Uke must be construed such that protective sleeve (60) of Uke is the "sleeve" of claim 1. We agree with the examiner, as explained on page 4 of the Answer, that the fact that Uke calls the outer cylindrical member a sleeve is irrelevant to the application of the reference because the physical structure of claim 1 is disclosed in Uke.

Uke further discloses that the hitting surface (60) and the sleeve (58) are comprised of composite materials where the first set of fibers and first resin of the hitting surface are different from the second set of fibers and second resin of the sleeve. See e.g., Uke, col. 7, lines 38-43 (barrel region of first tubular member 58 is formed of a thermoset epoxy resin reinforced with fiberglass or aramid) and col. 8, lines 47-52 (second tubular member 60 is formed from injection molded thermoplastic resin such as fiberglass reinforced nylon).

The appellants also argue that Uke does not anticipate claim 1 because the sleeve of Uke is not force fit within the hitting surface. Brief, p. 6. We find this argument unpersuasive, because claim 1 does not require that the sleeve be force fit within the hitting surface.

In their reply brief, on page 2, the appellants contend that even if one were to interpret Uke as we have done above, the handle of Uke is not “attached to the hitting surface.” In particular, the appellants argue that the handle is attached to the inner member 58 and that the outer tubular member 60 stops short of the handle.

In order for us to evaluate this argument, we must interpret the claim language “attached to.” We first construe the meaning of the words as used by the appellants in the claims. We determine the scope of the claims in patent applications “not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction ‘in light of the specification as it would be interpreted by one of ordinary skill in the art.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316, 75 USPQ2d 1321, 1329 (Fed. Cir. 2005) (*quoting In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827, 1830 (Fed. Cir. 2004)). We must be careful not to read a particular embodiment appearing in the written

description into the claim if the claim language is broader than the embodiment. See *Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868 (Fed. Cir. 2004) (“Though understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.”) The challenge is to interpret claims in view of the specification without unnecessarily importing limitations from the specification into the claims. See *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003).

The specification describes two embodiments for attachment of the handle to the hitting surface. In one embodiment, the handle 120 and hitting surface 110 are integral, and in the other embodiment, they are separate. Specification, page 5, lines 5-8. The specification further describes that the body 140 of the bat includes a tapered portion 114 which is positioned between the handle 120 and the tubular hitting surface 110. Specification, page 5, lines 11-12. Based on this description, we understand the appellants’ use of the term “attached to” does not require a direct connection of the handle and hitting surface, since it is described as having a tapered portion therebetween.

Based on the description of the handle and hitting surface in the specification, we interpret the claim recitation of “a handle element *attached to* the hitting surface” to merely require that the hitting surface be connected, whether directly or indirectly, to a portion of the bat that serves as a handle.

In the embodiment shown in Figure 6 of Uke, the outer tubular member (60) engages telescopically over the inner member (58) in the transition and barrel regions of the bat. Uke, col. 6, lines 35-38. The inner tubular member (58) extends the entire length of the bat so that the portion of the member (58) beyond the end of the transition region forms the handle region (52). Uke, col. 6, lines 29 and 34-35. Uke further discloses that the outer and inner tubular members are preferably secured together by a suitable adhesive. Uke, col. 7, lines 10-13. As such, the handle (handle region 52 of first tubular member 58) is attached to the hitting surface (impact or barrel region 54 of second tubular member 60) via the overlapping engagement of the two members (58) and (60) in the transition region such that the member (60) abuts and attaches the handle indirectly to the hitting surface. Accordingly, we affirm the rejection of claims 1, 2, and 6 under 35 U.S.C. § 102(b).

Rejection under 35 U.S.C. § 103(a)

The appellants argued claims 3, 5, 7, and 8 separately. As such, we take each claim in turn.

With regard to claim 3, the examiner found that Uke teaches varying the stiffness of the two elements (58, 60) as desired. The examiner found it would have been obvious to one of ordinary skill in the art to have varied the stiffness within the range claimed by the appellants if such stiffness was desired. Final Office Action, p. 3. On page 4 of the Answer, the examiner further noted that in light of the prior art teaching in Uke, the recitation in claim 3 of one stiffness being three times the other cannot be considered unobvious absent some showing of unexpected results. We agree.

Not only does Uke teach varying the stiffness of the inner and outer members to achieve different desired results, but it also teaches an embodiment where the inner member is stiffer than the outer member. Uke, col. 4, lines 3-6.¹ “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); *see also Peterson*, 315 F.3d at 1330, 65 USPQ2d at 1382 (“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.”)

The appellants provided no evidence to support the criticality of the claimed ratio of stiffnesses to rebut the examiner’s finding of routine experimentation.

¹ On page 4 of the Reply Brief, the appellants argue that Uke teaches that the outer tubular member has a lower flex modulus, and thus a stiffness *greater than* the inner sleeve. We disagree with the appellants’ understanding of the relationship of flex modulus to stiffness. As clearly explained in Uke, col. 4, lines 3-6, a higher flex modulus corresponds to a higher stiffness. Uke describes in this embodiment that the first, inner member has a higher flex modulus and is thus stiffer than the second, outer member. Uke, col. 4, lines 4-6. *See also McGraw-Hill Dictionary of Scientific and Technical Terms* 772, 1922 (5th ed., 1994), which defines “stiffness” as “The ratio of a steady force acting on a deformable elastic medium to the resulting displacement” and which defines “flexural modulus” as “A measure of the resistance of a beam of specified material and cross section to bending, equal to the product of Young’s modulus for the material and the square of the radius of gyration of the beam about its neutral axis.” According to these definitions, if a composite material has a high flex modulus, it would be more resistant to bending and thus stiffer.

Based on the teaching in Uke to make the inner member stiffer than the outer member, we find that making the stiffness of the inner sleeve three times the stiffness of the hitting surface would have been a matter of routine optimization and that a person having ordinary skill in the art at the time the invention was made would have been led to this claimed invention by his/her normal motivation to improve upon what is already generally known. Accordingly, we sustain the rejection of claim 3 under 35 U.S.C. § 103(a).

Claim 5 recites that the first set of fibers of the hitting surface includes a tubular sock. The examiner found that Uke discloses that the bat layer may be constructed in various fashions as desired and that the use of tubular socks is a commonly known method of applying fiber reinforced composite layers. Final Office Action, p. 3. The examiner found that it would have been obviously suitable for the ordinarily skilled artisan looking to construct Uke's bat to use a tubular sock depending on what material was more readily available or cheaper. Final Office Action, p. 3. The appellants traverse the taking of Official Notice by the examiner. Brief, p. 12.

We agree with the examiner it was commonly known at the time of the invention to use fiber reinforcing materials in the form of a tubular sock. *See e.g.*, U.S. Patent No. 4,690,850 to Fezio, col. 1, lines 6-26 (describing the use of a fiber reinforced "sock" made of fibrous material such as glass, aramid fibers, carbon, metal wire, and polyester, for covering a ski core for making fiber reinforced skis). We further agree with the examiner that it would have been obvious to one having ordinary skill in the art at the time the invention was made, in view of the teachings of Uke and the common knowledge that fibers used for fiber-reinforced material

come in the form of a tubular sock, to have used a tubular sock of resin depending on what material was more readily available or cheaper. Accordingly, we sustain the examiner's rejection of claim 5 as obvious under 35 U.S.C. § 103(a) over Uke in view of Official Notice.

Claim 7 recites that the second set of fibers and second resin of the sleeve is an E-glass fiber impregnated resin. The examiner found that E-glass is commonly known and would have been suitable for use as Uke's fiberglass. Final Office Action, p. 3. The examiner found motivation to use E-glass fibers in the bat of Uke based on Uke's teaching that other known fibers may be used as desired. Final Office Action, p. 4. The appellants traverse the taking of Official Notice by the examiner. Brief, p. 12.

We agree with the examiner that it was commonly known at the time of the invention to use E-glass fibers as a glass fiber reinforcing material. *See e.g.*, U.S. Patent No. 5,373,057 to Watanabe *et al.*, col. 4, lines 56-60 (describing the use of E-glass as the preferred glass fiber in a glass fiber-reinforced thermoplastic resin). We find that Uke suggests the use of fiberglass-filled nylon and graphite-filled nylon as suitable bat materials, and it further teaches that "[o]ther equivalent base plastics and reinforcing fibers may be used to produce different stiffness values in the handle and barrel and different stiffness ratios, varying the feel and throw distance properties of the bat." Uke, col. 4, lines 19-23. We hold that it would have been obvious to one having ordinary skill in the art at the time the invention was made, in view of the teachings of Uke and the common knowledge that E-glass is a type of glass fiber used for fiber-reinforced material, to have used E-glass fiber impregnated resin depending on what stiffness the manufacturer was trying to

achieve. Accordingly, we sustain the examiner's rejection of claim 7 as obvious under 35 U.S.C. § 103(a) over Uke in view of Official Notice.

Claim 8 recites that the second set of fibers and resin is a sheet of material. The examiner found that Uke discloses that the bat layers may be constructed in various fashions as desired and that the use of sheet materials is a commonly known method of applying fiber reinforced composite layers. Final Office Action, p. 3. The examiner found that it would have been obviously suitable for the ordinarily skilled artisan looking to construct Uke's bat to use a sheet of fiber-reinforced resin material depending on what material was more readily available or cheaper. Final Office Action, p. 3. The appellants traverse the taking of Official Notice by the examiner. Brief, p. 12.

We agree with the examiner it was commonly known at the time of the invention to use fiber-reinforced resin materials in the form of a sheet of material. *See e.g.*, U.S. Patent No. 3,765,998 to Oswald *et al.*, col. 1, lines 7-14 (describing a method of forming a glass fiber-reinforced polymer resin in the form of a sheet). We further agree with the examiner that it would have been obvious to one having ordinary skill in the art at the time the invention was made, in view of the teachings of Uke and the common knowledge that fiber-reinforced resin materials come in the form of a sheet, to have used a sheet of material depending on what material was more readily available or cheaper. Accordingly, we sustain the examiner's rejection of claim 8 as obvious under 35 U.S.C. § 103(a) over Uke in view of Official Notice.

To summarize, the decision of the examiner to reject claims 1, 2, and 6 under 35 U.S.C. § 102(b) as anticipated by Uke is sustained. The decision of the examiner to reject claims 3, 5, 7, and 8 under 35 U.S.C. § 103(a) as being unpatentable over Uke is also sustained.

AFFIRMED

Anton W. Fetting
ANTON W. FETTING
Administrative Patent Judge

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WADDEY & PATTERSON, P.C.
1600 DIVISION STREET, SUITE 500
NASHVILLE, TN 37203

LEH/jrg